



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/801,795

03/16/2004

Lawrence J. Dickson

29381/04000

1927

24024

7590

04/19/2006

CALFEE HALTER & GRISWOLD, LLP  
800 SUPERIOR AVENUE  
SUITE 1400  
CLEVELAND, OH 44114

EXAMINER

JOHNSON, STEPHEN

ART UNIT

PAPER NUMBER

3641

DATE MAILED: 04/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/801,795	<b>Applicant(s)</b> DICKSON, LAWRENCE J.	
	<b>Examiner</b> Stephen M. Johnson	<b>Art Unit</b> 3641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) 9-11, 21 and 24 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 12-17, 19, 20, 22, 23 and 25-29 is/are rejected.
- 7) ☒ Claim(s) 18 is/are objected to.
- 8) ☒ Claim(s) 1-29 are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

Art Unit: 3641

1. Applicant's election with traverse of species A directed to a metallic facing element (illustrated in figs. 1-3) in combination with a backing structure in the reply filed on 8/16/2005 is acknowledged.

Claims 9-11, 21, and 24 are withdrawn from consideration as being directed to non-elected species. Claim 11 contains the claim limitation "corrugated" that is directed to the embodiment that includes fig. 4. Claim 21 contains the claim limitation directed to "a protective outer cover" that is directed to species A'.

Claims 1-8, 12-20, 22-23, and 25-29 read on the elected species A and an action on these claims follows.

2. Claims 25-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 25, use of the phrase "a ratio of thickness of the backing portion to thickness of the metallic facing element is selected to be effective against a predetermined penetration threat" makes the claim indefinite as to what ratios may or may not be inclusive in such terminology.

3. Applicant argues that he has given examples in para. [0046] and [0047] of suitable thickness ratios that would have the intended effect. Is one to believe that these are the only ratios intended? If not, how would one of ordinary skill be appraised of what ratios are intended? This cannot be determined and as such is indefinite.

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 3641

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-3, 12-15, and 22-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Auyer et al. (593).

Auyer et al. (593) disclose a metallic armor assembly comprising:

- a) a metallic facing element with perforations to reduce the density by at least 20%; and
  - 14 or 18
  - cols. 6, 7
- b) a fiber composite substrate backing.
  - 38; col. 2, lines 47-51

6. Applicant's arguments are addressed as follows. It is argued that the claim limitation directed to "a backing layer comprising a fiber composite substrate" is not met by Auyer et al.. The examiner sees no reason why integument 38 (see col. 4, lines 14-17) cannot meet this claim limitation. It is argued that integument 38 encloses and encases the outer and inner perforated steel plates as well as the first and second fillers. It is further argued that this integument 38 is separate from aluminum backing plate 28. In response, any plate that supports either of the steel plates 14 and 18 may properly be described as a backing plate in view of the fact that each of these plates and not just aluminum backing plate 28 supports or backs the steel plates 14 and 18. It is further argued that the integument 38 is a cover and not a backing. In response, the integument is both a cover and a backing. The upper portion of integument 38 (see fig. 1) acts as a cover whereas the lower portion of integument 38 (see fig. 1) acts as a support or backing. It is further argued that Auyer et al. does not hint at any layer other than backing plate 28 as being a backing plate. This is not convincing. Any of the layers 22, 24, 38 (lower portion), and/or 28 act to support the steel plates 14 and 18 and as such any of these layers may properly be considered or described as a backing layer.

Art Unit: 3641

7. Claims 4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Auyer et al. (593) in view of Tarsi et al..

Auyer et al. (593) apply previously recited. However, undisclosed are circular apertures of a particular size and spacing to correspond to the diameter or caliber of the projectile encountered. Tarsi et al. teach circular apertures of a particular size and spacing to correspond to the diameter or caliber of the projectile encountered (see pages 2-6). Applicant is substituting one particular aperture shape and arrangement as explicitly encouraged by the secondary reference (see Tarsi et al. page 5, lines 2-6; page 4, lines 19-21; page 2, lines 18-26). It would have been obvious to a person of ordinary skill in this art at the time of the invention to apply the teachings of Tarsi et al. to the Auyer et al. (593) metallic armor and have a metallic armor with a different type of aperture with associated aperture size and spacing.

8. Claims 16-17, 19-20, and 28-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Auyer et al. (593) in view of Harpell et al. (426).

Auyer et al. apply as previously recited. However, undisclosed is a backing layer that is

Art Unit: 3641

composed of at least two fiber layers aligned at 90 degree angles and including a resin matrix or adhesive. Harpell et al. teach a backing layer that is composed of at least two fiber layers aligned at 90 degree angles and including a resin matrix or adhesive (layer 14; col. 4, lines 20-67; and col. 3, lines 11-14). Applicant is substituting one backing layer for another as explicitly encouraged by both the primary and secondary references (see claims 4 and 9 of Auyer et al. (note that in this rejection either filler layer 22 or 24 is being relied upon as the backing layer)) and (see col. 4, lines 20-67 of Harpell et al.)). It would have been obvious to a person of ordinary skill in this art at the time of the invention to apply the teachings of Harpell et al. to the Auyer et al. armor and have an armor with a different material type of backing layer.

9. Claims 25 and 27 are rejected under 35 U.S.C. 102(b) as being anticipated by King (355).

King (355) discloses an armor plate comprising:

- a) a metallic facing element; 16
- b) a fiber composite substrate; 10, 13
- c) a ratio of the layer thickness to the filament diameter is see filaments 10 in fig. 5  
less than 20; and
- d) a backing thickness between 4-10 times the thickness of see fig. 5  
the metallic facing element.

10. Claim 25 is rejected under 35 U.S.C. 102(b) as being anticipated by Harpell et al. (426).

Art Unit: 3641

Harpell et al. (426) disclose an armor plate comprising:

- a) a metallic facing element; 12
- b) a fiber composite substrate; and 14, 16
- c) a ratio of the layer thickness to the filament diameter is see filaments 16 in fig. 1  
less than 20.

11. Claims 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harpell et al. (426) in view of Park (536).

Harpell et al. apply as previously recited. However, undisclosed is a backing thickness of about 7 times the thickness of the metallic facing element. Harpell et al. in combination with Park teaches this claim limitation. This is taught by the fact that Park expressly teaches adding additional layers of backing material for the desired amount of ballistic protection (see col. 2, lines 58-62 of Parks). As such applicant could make the ratio of the thickness in Harpell et al. to any desired amount by adding the appropriate number of additional backing layers. It would have been obvious to a person of ordinary skill in this art at the time of the invention to apply the teachings of Park to the Harpell et al. armor and have an armor with the appropriate thickness ratios.

12. Claim 18 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. Johnson whose telephone number is 571-272-6877

Art Unit: 3641

and whose e-mail address is ([Stephen.Johnson@uspto.gov](mailto:Stephen.Johnson@uspto.gov)). The examiner can normally be reached on Tuesday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone can be reached on 571-272-6873. The Central FAX phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 800-786-9199.



**STEPHEN M. JOHNSON**  
**PRIMARY EXAMINER**

Stephen M. Johnson  
Primary Examiner  
Art Unit 3641

SMJ  
April 13, 2006